

Remarks

Claims 1-20 are currently pending in this application. The Examiner has objected to the Specification due to a typographical error found therein. By this Amendment, Applicants correct the error found therein. The Examiner has objected to Claims 1, 3, 6, 12, 14, 17 and 19 due to informalities found therein. Applicants submit amendments to the claims to correct those informalities. The Examiner has rejected Claims 17 and 18 under 35 USC 112 as being indefinite. By this amendment, Applicants have amended Claim 17 to properly depend from Claim 16; and, have amended Claim 18 to recite that the steps of Claim 12 are being carried out by a computer program. Applicants believe that the foregoing amendments address the Examiner's concerns and respectfully request withdrawal of the objections and rejections under 35 USC 112. The Examiner has rejected Claims 1-20 under 35 USC 103(a) as being unpatentable over Tanaka in view of Obuchi. Based on the amendments presented herein, and in light of the following arguments, Applicants respectfully assert that the claims are patentable over the cited art.

The present application teaches and claims an apparatus, system, method, and program storage device for setting a transmission-rate parameter for transmission of information units in a wireless communication system. As claimed in amended independent Claim 1, the apparatus comprises a total counter for counting a total number of received information units in a single sequence of L-slot Pulse Position Modulation (L-PPM) information units; an error counter for counting an error number of invalid received

information units in the sequence of L-PPM information units; a division unit for dividing said error number by said total number, the division result being providable as a link-quality measure at an output of said division unit, characterized in that said division unit is adapted to automatically perform binary divisions by 2 using a shift operation after n information units are received, where n is some integral power of 2; and a decision unit for setting said transmission-rate parameter by comparing said link-quality measure with at least one predefined value and defining said transmission-rate parameter to assume a corresponding data rate. The invention is able to set the transmission rate based on a single received sequence of information units and does not require a control signal. The language of each of the independent claims has been amended to expressly recite that the counter and error detector count the number of received information units and invalid received information units in a single received sequence of L-PPM information units.

The Tanaka patent is directed to a radio communication system wherein the transmission rate from a base station can be regulated to compensate for signal fading. A received signal strength indicator (RSSI) detector detects an "initial transmission rate" based on the signal strength of a signal received from the base station. That initial transmission rate is communicated back to the base station, after which the base station sends a control signal at the initial transmission rate. The control signal includes frame synchronization data inserted into the header portion of the control signal (see: Col. 3, lines 33-43). The bit error rate detector detects a bit error rate of the control signal by detecting frame synchronization errors which may

occur as signal quality is degraded due to fading. Based on the detected bit error rate, the transmission rate determiner regulates the initial transmission rate and communicates that to the base station.

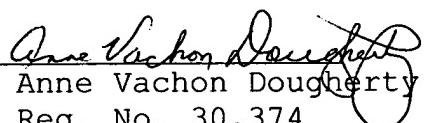
Applicants disagree with the Examiner's conclusion that the Tanaka patent teaches the invention substantially as claimed. With specific reference to the claim features of Claim 1, Tanaka does not teach or suggest a total counter for counting a total number of received information units in a single sequence of L-slot Pulse Position Modulation (L-PPM) information units, an error counter for counting an error number of invalid received information units in the sequence of L-PPM information units, or a division unit for dividing an error number by the total number, the division result being providable as a link-quality measure. Tanaka simply teaches a bit error rate detector which detects frame synchronization errors, which are used to modify an initial transmission rate determined by signal strength.

The Examiner has acknowledged that Tanaka does not teach the counting of total information units, the counting of invalid information units or the dividing of the error number by the total number. The Obuchi patent has been cited for modifying the Tanaka patent teachings. The Obuchi patent teaches apparatus for measuring error rates in a mobile radio communication system which uses multiple reception means. The signals input to the multiple reception means are compared and errors are detected based on the comparisons (Col. 5, line 65-Col. 6, line 6). The Obuchi system tracks the number of errors over a period of time and then divides the error count by the number of bits received in the time period. The result is then divided by the number of reception means used.

Applicants first note that it would not be logical to modify Tanaka with the teachings of Obuchi. Since Tanaka seeks to compensate for fading, and signal strength would presumably be the same at the multiple reception means, it is unlikely that one would detect fading differences using adjacent reception means, as are taught by Obuchi. Moreover, even if one were to modify Tanaka with Obuchi, one would not arrive at the invention as claimed, since neither Tanaka nor Obuchi teaches or suggests detecting errors in a single sequence of L-PPM information units, alone or in combination with the additionally-recited claim elements.

Applicants respectfully assert that the Examiner has failed to establish a *prima facie* case of obviousness against the claims, since the cited art does not teach or suggest all of the claim limitations (*In re Wilson*, 424 F. 2d 1382, 1385, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970)). Based on the foregoing amendments and remarks, Applicants request entry of the amendments, reconsideration of the rejections, and allowance of the claims.

Respectfully submitted,

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